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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/597,975	06/20/2000	Yochai Konig	UTO-101	9014

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EXAMINER	
BURGESS, BARBARA N	
ART UNIT	**PAPER NUMBER**
2157	

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/597,975	KONIG ET AL.	
	Examiner	Art Unit	
	Barbara N Burgess	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-62* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-62* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to Request for Reconsideration filed March 8, 2004.

Claims 1-62 are presented for further examination.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breese et al. (hereinafter "Breese", 6,006,218).

As per claims 1 and 32, Breese discloses a computer-implemented method for providing automatic, personalized information services to a user u, the method comprising:

- Transparently monitoring user interactions with data while the user is engaged in normal use of a computer (column 3, lines 23-27, column 5, lines 2-5, 15-18, 25-38, column 7, lines 65-67, column 8, lines 1-11);
- Updating user-specific data files, wherein the user-specific data files comprise the monitored user interactions with the data and a set of documents associated with the user (column 5, lines 25-38, column 8, lines 33-36, 40-42, 44-46, column 16, lines 38-40, 50-52);

- Analyzing a document d to identify properties of the document (column 2, lines 53-60, column 5, lines 51-67, column 6, lines 1-2, 11-20, column 8, lines 44-54, column 9, lines 60-63, column 10, lines 1-13).

Breese does not explicitly disclose:

- Estimating parameters of a learning machine, wherein the parameters define a User Model specific to the user and wherein the parameters are estimated in part from the user-specific data files;
- Estimating a probability P (u/d) that the document d is of interest to the user u, wherein the the probability P (u/d) is estimated by applying the identified properties of the document to the learning machine having the parameters defined by the User Model;
- Using the estimated probability to provide automatic, personalized information services to the user.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the user already knows the document, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's

experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate estimating parameters of a learning machine, wherein the parameters define a User Model specific to the user and wherein the parameters are estimated in part from the user-specific data files, estimating a probability P (u/d) that the document d is of interest to the user u, wherein the the probability P (u/d) is estimated by applying the identified properties of the document to the learning machine having the parameters defined by the User Model, and using the estimated probability to provide automatic, personalized information services to the user in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 2 and 33, Breese discloses wherein the user-specific data files include documents of interest to the user u and documents that are not of interest to the user u, and wherein estimating the parameters comprises distinct treatment of the documents of interest and the documents that are not of interest (column 12, lines 44-55).

As per claims 3 and 34, Breese discloses wherein analyzing the document d provides for the analysis of documents having multiple distinct media types (column 8, lines 15-26)

As per claims 4 and 35, Breese discloses wherein transparently monitoring user interactions with data comprises monitoring multiple distinct modes of user interaction with network data (column 5, lines 25-38).

As per claims 5 and 36, Breese discloses wherein the multiple distinct modes of user interaction comprise a mode selected from the group consisting of a network searching mode, a network navigation mode, a network browsing mode, an email reading mode, and email writing mode, a document writing mode, a viewing "pushed" information mode, a finding expert advice mode, and a product purchasing mode (column 5, lines 25-38).

As per claims 6 and 37, Breese discloses crawling network documents, wherein the crawling comprises parsing crawled documents for links, calculating probable user interest in the parsed links using the learning machine, and preferentially following links likely to be of interest to the user (column 9, lines 51-67, column 10, lines 1-27, 38-55).

As per claims 7 and 38, Breese discloses wherein the identified properties of the document d comprise a user u-independent property selected from the group consisting of:

- A probability P (tad) that the document d is of interest to users interested in a topic t (column 6, lines 38-45);
- A topic classifier discrete probability distribution P (t/d) (column 6, lines 38-45);
- A product model discrete probability distribution P (p/d) (column 6, lines 38-45);
- Product feature values extracted from the document d (column 9, lines 50-67, column 10, lines 1-20);
- An author of the document d (column 9, lines 50-67, column 10, lines 1-20);
- An age of the document d (column 9, lines 50-67, column 10, lines 1-20);
- A list of documents linked to the document d (column 9, lines 50-67, column 10, lines 1-20);
- A language of the document d (column 9, lines 50-67, column 10, lines 1-20);
- A number of users who have accessed the document d (column 11, lines 1-30);
- A number of users who have saved the document d in a favorite document list (column 11, lines 1-30);
- A list of users previously interested in the document d (column 11, lines 1-30).

As per claims 8 and 39, Breese does not explicitly disclose wherein the parameters of the learning machine define a user u-dependent function selected from the group consisting of:

- A user topic probability distribution P (t/u) representing interests of the user u in various topics t;
- A user product probability distribution P (p/u) representing interests of the user u in various products p;
- A user product feature probability distribution P (F/u, p) representing interests of the user u in various features f of each of the various products p;
- A website probability distribution P(s/u) representing interests of the user u in various websites s;
- A cluster probability distribution P(c (u)/u) representing similarity of the user u to users in various clusters c (u);
- A phrase model probability distribution P (w/u) representing interests of the user u in various phrases w;
- An information theory based measure I (Iw; Iu) representing mutual information between various phrases w and the user u;
- An information theory based measure I (It; Iu) representing mutual information between various topics t and the user u;
- An information theory based measure I (Is; Iu) representing mutual information between various websites s and the user u;
- An information theory based measure I (Ip; Iu) representing mutual information between various products p and the user u;
- An information theory based measure I (If; Iu) representing mutual information between various features f of each of the various products p and the user u.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the user already knows the document, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate the parameters of the learning machine defining a user u-dependent function in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 9 and 40, Breese does not explicitly disclose wherein the parameters of the learning machine define:

- A user product probability distribution P (p/u) representing interests of the user u in various products p;
- A user product feature probability distribution P (f/u, p) representing interests of the user u in various features f of each of the various products p;
- Estimating a probability P (u/d, product described=p) that a document d that describes a product p is of interest to the user u, wherein the probability is estimated in part from the user product probability distribution and the user product feature probability distribution.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the user already knows the document, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are

displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate the parameters of the learning machine defining user product probability distribution, user product feature probability distribution, and estimating a probability in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 10 and 41, Breese does not explicitly disclose recommending products to the user based on the probability P (u/d, product described=p). However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the user already knows the document, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the

Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate recommending products to the user based on the probability in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 11 and 42, Breese does not explicitly disclose estimating a posterior probability P (u/d, q) that the document d is of interest to the user u, given a query q submitted by the user.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may

be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate estimating a posterior probability in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 12 and 43, Breese does not explicitly disclose wherein estimating the posterior probability comprises estimating a probability P (q/d, u) that the query q is expressed by the user u with an information need in the document d.
However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the

probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate estimating a posterior probability in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 13 and 44, Breese does not explicitly disclose applying the identified properties of the document d to a learning machine having product parameters characterizing a product p to estimate a probability P (p/d) that the document d refers to the product p.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as

unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate applying identified properties of the document to a learning machine in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 14 and 45, Breese does not explicitly disclose updating the product parameters based on the identified properties of the document d and the estimated probability P (p/d).

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest

to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate updating the product parameters based on the identified properties of the document and the estimated probability in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 15 and 46, Breese discloses initializing the product parameters based on a set of documents associated with the product p (column 8, lines 15-50).

As per claims 16 and 47, Breese does not explicitly disclose clustering multiple users into clusters of similar users, wherein the clustering comprises calculating distances between User Models, and selecting similar users based on the calculated distances between User Models.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate clustering multiple users in Breese's system enabling the user to more efficiently view relevant, unknown documents by

generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 17 and 48, Breese does not explicitly disclose calculating relative entropy values between User Models of multiple users, and clustering together users based on the calculated relative entropy values.
However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate calculating relative entropy in

Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 18 and 49, Breese does not explicitly disclose wherein the parameters defining the User Model comprise calculated distances between the User Model and User Models of users similar to the user.
However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate parameters defining the User Model in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claim 19 and 50, Breese does not disclose selecting in a group of users an expert user in an area expertise, wherein selecting the expert user comprises finding an expert User Model among User Models of the group of users, such that the expert User Model indicates a strong interest of the expert user in a document associated with the area of expertise.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible

by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate selecting in a group of users an expert in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claim 20 and 51, Breese discloses parsing the document d for hyperlinks, and separately estimating for each of the hyperlinks a probability that the hyperlink is of interest to the user u (column 9, lines 51-67, column 10, lines 1-27, 38-55).

As per claims 21 and 52, Breese does not explicitly disclose sending to a third party web server user interest information derived from the User Model, whereby the third party web server may customize its interaction with the user.
However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or

wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate sending to a third party web server user interest information in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 22 and 53, Breese discloses wherein the monitored user interactions include a sequence of interaction times (column 9, lines 63-67).

As per claims 23 and 54, Breese discloses initializing the User Model using information selected from the group consisting of a set of documents provided by the user, a web browser history file associated with the user, a web browser bookmarks file

associated with the user, ratings by the user of a set of documents, and previous product purchases made by the user.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate initializing the User Model using information selected from the group consisting of set documents in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 24 and 55, Breese does not explicitly disclose modifying the User Model based on User Model modification requests provided by the user. However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate modifying the User Model in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 25 and 56, Breese does not explicitly disclose providing to the user a score for a document identified by the user, wherein the score is derived from the estimated probability.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate providing to the user a score in Breese's system enabling the user to more efficiently view relevant, unknown

documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 26 and 57, Breese discloses providing to the user a 3D map of a hyperlinked document collection, wherein the 3D map indicates a user interest in each document (column 5, lines 25-38).

As per claims 27 and 58, Breese does not explicitly disclose temporarily using a User Model that is built from a set of predetermined parameters of a profile selected by the user.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are

displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate using a User Model built from a set of predetermined parameters in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 28 and 59, Breese does not explicitly disclose initializing the User Model by selecting a set of predetermined parameters of a prototype user selected by the user.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the

Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate initializing the User Model by selecting a set of predetermined parameters in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 29 and 60, Breese does not explicitly disclose updating the predetermined parameters of the prototype user based on actions of users similar to the prototype user.

However, Breese teaches taking the information stored in the user database (User Model) and the information database (properties of the document) to estimate (probability) whether the user has knowledge of the document (document is of interest to the user). According to Breese, if the document is already known to the user, it is considered to be of little or no interest. Known documents may be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. The knowledge probability estimator is used to estimate the probability that the user already knows about various documents. Factors which may

be used in generating the knowledge probability are popularity of the item, user's experience in the subject, user's occupation, the amount of time a user has been on the Internet, the overall salience of an item, the amount of time an item has been accessible by the public, or on the server, demographic information about the user. The results are displayed so that the user can review them (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate updating the predetermined parameters in Breese's system enabling the user to more efficiently view relevant, unknown documents by generating a rank ordered listing of items most likely to be of interest to the user so that the user can select from among new and useful documents.

As per claims 30 and 61, Breese discloses identifying a set of users interest in the document d (column 16, lines 34-42).

As per claims 31 and 62, Breese discloses calculating a range of interests in the document d for the identified set of users (column 16, lines 34-42).

Response to Arguments

The Office notes the following arguments:

(a) Applicants assert that the Breese does not specify nor imply that the user is engaged in normal use of the computer, nor the monitoring is transparent.

(b) Breese does not discuss any analysis of documents.

(c) Hertz does not teach or imply any learning to estimate probability of user interests.

(d) Hertz does not teach determine probability measures.

(e) Hertz does not teach clusters of user models.

In response to:

(a) Breese explicitly discloses "the present invention can be done when making recommendations to a user, e.g., in response to a user initiated information request, **or after monitoring a user's actions for a period of time**". In Breese, "monitoring a user's actions" is done transparently through the web browser. "In one embodiment, the **Internet browser application** stores information on Internet sites visited by the user as well as information on the frequency of visits to Internet sites, by one or more users, in the user database." Therefore, whenever the user visits different web pages, not only does transparent monitoring takes place, but the user is also engaging in **normal** use of a computer (column 3, lines 23-27, column 5, lines 2-5, 15-18, 25-38, column 7, lines 65-67, column 8, lines 1-11).

(b) Breese explicitly discloses getting information on the content or subject matter of the item, overall salience of an item. Therefore, the document must be analyzed in order to determine these properties (column 2, lines 53-60, column 5, lines 51-67, column 6, lines 1-2, 11-20, column 8, lines 44-54, column 9, lines 60-63, column 10, lines 1-13).

(c)-(e) Breese discloses estimating parameters of a learning machine, wherein the parameters define a User Model specific to the user and wherein the parameters are estimated in part from the user-specific data files and estimating a probability P (u/d) that the document d is of interest to the user u, wherein the the probability P (u/d) is estimated by applying the identified properties of the document to the learning machine having the parameters defined by the User Model (Abstract, column 7, lines 59-67, column 8, column 9, lines 1-19, 51-67, column 10, column 16, lines 35-42).

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara N Burgess whose telephone number is (703) 305-3366. The examiner can normally be reached on M-F (8:00am-4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (703) 308-7562. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Barbara N Burgess
Examiner
Art Unit 2157

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June 1, 2004

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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100